UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,568	07/08/2003	Ronald de Man	1	9029

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Docket Administrator (Room 3J-219)
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EXAMINER
GANDHI, ANKIT P

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/615,568	MAN, RONALD DE
	Examiner	Art Unit
	Ankit P. Gandhi	2616

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2007*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Response to Arguments

Applicant's arguments filed on 08/16/2007, with respect to the rejection(s) of claim(s) 1-

6 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Varghese,

Patent No.: 6,560,236 in view of Van Seters, Patent No.: 5,978,378.

Regarding claims 1,4 and 7, Varghese discloses a multi-bridge for use in a network that

contains a plurality of subnetworks, wherein the multi- bridge comprises: for each subnetwork a

set of at least two ports, the multi- bridge being operable to register which of the ports are used

by a Virtual Local Area Network (VLAN), wherein the multi-bridge is arranged to forward a

data packet which is sent with an identifier that identifies the VLAN to those of the ports that the

VLAN is registered to use.

Varghese further discloses a network device for interconnecting computer networks

(abstract and column 2, lines 1-2). The network interface includes both a bridge **(column 2,**

line 3) and a router **(column 2, lines 20-22)** that together read on the multi-bridge **(also see**

figure 2 and figure 4). The bridge has a plurality of ports through which network-communications pass to and from said bridge, and it also includes an interface enabling a user to partition the plurality of bridge ports into a plurality of groups, wherein each group represents a different virtual network **(column 2, lines 3-8).** These groups are identified in both figure 1 and figure 2 as VLANs; figure 2, in particular, also clearly shows two bridge ports assigned to each VLAN. The bridge also has additional ports **(client ports)** that connect it to the router, and the router has ports of its own that connect it to the bridge **(figure 2 and column 2, lines 20-26).** The router includes a source table **(see 144 in figure 4)** that contains a mapping of source addresses to the virtual networks, in which the source addresses represent locations of stations that are connected to the virtual networks and that send communications to the bridge **(column 2, lines 26-30).** The bridge includes a database **(see 146 in figure 4)** that maps the bridge ports to the virtual networks I (VLANs) **(column 2, lines 57-59).** In this way, the bridge-router combination is able to identify the virtual network (or VLAN) from which packets came **(column 2, lines 26-32),** and on which port it arrived. The router-bridge combination is also able, using these mappings, to send communications to a different virtual network (VLAN) than the one from which communications was received **(column 2, lines 17-20).**

However, Varghese et al. do not disclose the claimed invention wherein the multi-bridge is operable to register upon receiving a data packet by one of the at least two ports of a particular set, that the VLAN identified by the identifier of the data packet uses the ports of the particular set, at least when the multi-bridge has not yet registered that the VLAN identified by the identifier of the data packet uses the particular set on which the data packet was received.

Van Seters discloses telecommunication bridge telecommunications bridge/router device
to examine a received frame to **determine which VLAN**, if any, the frame is associated with.
The protocol type, receive port identification, and receive VLAN tag are employed to **determine
the transmit port identification** and transmit VLAN tag. **A predefined table indicates which
ports within the bridge/router are associated with the VLAN** (Abstract).

Van Seters further discloses, where VLAN mapping table is searched by receive port,
receive VLAN tag and protocol VLAN index (**4: 55-56**), and further discloses each row
is located in the VLAN mapping table 93, the VLAN ID is employed as an index into a VLAN
membership table 95 as shown in step 96. The VLAN membership table 95 is indexed by the
VLAN ID. Each row of the VLAN membership table 95 includes a port mask field that **indicates
each valid port for the VLAN corresponding to the VLAN ID** in the row. **The port mask
indicates *the state of each physical port*** within the bridge/router with two bits per port and
describes the spanning tree state of the ports.

*If any bit for a port is set then the port is considered a valid member of the VLAN. If
the first bit is not set then that port is not considered a valid portion of the VLAN.* **(Thus, it is
obvious that system of Van Seters consider any ports with two bits as a valid port or valid
member of the VLAN, where packets needs to be transmitted, So indication of finding a
right ports considered as a registration of particular port upon receiving data using VLAN
identifier of the data packet uses the ports for transmission).**

*Where, the second bit is used to enable transmission for the respective port. Thus,
transmission through the port is only allowed if both the first and second bits are set.*

Each port in the bridge/router has a VLAN tag table 97 associated therewith. Each such

VLAN tag table has 256 rows indexed by VLAN ID. The previously obtained VLAN ID and

port number are employed to retrieve a new VLAN tag from each VLAN tag table corresponding

to each port indicated by the port mask obtained from the VLAN membership table. The new

VLAN tag is then written to the header portion of the frame before transmitting the frame out of

the bridge/router as shown in step 100 **(5: 1-21).**

Therefore, it would have been obvious to one skill in the art at the time invention was

made to combine teaching of Van Seters in the system of Varghese, because VLANs contain

broadcast and multicast traffic within a predefined group to limit unnecessary bandwidth use in

the overall network, and Data units that are associated with a VLAN are identified by a field

located at layer-3 of the header of each such data unit. Further, in particular, data transmitted

from a member of the VLAN to another member of the VLAN may contain VLAN tag indicators

that allow the data to be easily filtered outside of the VLAN, thereby it can reduce superfluous

network traffic, and distinguishing feature allows devices that are not in close proximity to be

members of a common VLAN, examination and processing of layer-3 header information is time

consuming and processor intensive **(1:25-38).**

Regarding claims 2 and 5, Varghese and Van Seters disclose the same limitation as

disclosed above. Furthermore, Van teaches, if the first bit *is not set then that port is not*

considered a valid portion of the VLAN. (Thus, it is obvious that system of Van Seters consider

any ports with two bits as a valid port or valid member of the VLAN, and if the first bit is not set

then it consider as a invalid port (herein referred as, de-registration of port). Where, the only

second bit is used to enable transmission for the respective port. Thus, transmission through the

port is only allowed if both the first and second bits are set, and if they are not set, then de-registering the ports from the set of ports in the router/bridge.

Regarding claims 3 and 6, Varghese and Van Seters disclose the same limitation as disclosed above, furthermore, Van Seters discloses In multibridge mode the Receive Frame Processor 48 logic <u>circuits check the</u> VLAN membership table to <u>verify</u> that the destination port in the Address Cache ASIC 26 lookup is in the forwarding state. <u>If the port is not in the forwarding state then the frame will be processed in software.</u> In single bridge mode, the transmit port state is checked against the Port Control Register ("PCR") 52 and the frame will likewise be forwarded to the FP if the port is not in the forwarding state. Each <u>PCR maintains status information for the respective port</u> with which the PCR is associated. Such <u>status information includes port state and filtering designators</u>. In <u>single bridge mode</u>, when VLAN security is enabled the VLAN membership table is consulted to <u>verify that the destination port is part of the destination VLAN</u>, and prior to transmitting the frame, the VLAN tag type is either added, removed, or modified based on the resultant lookup in the VLAN tag table 97 **(figure 2, 3-4, and 5:41-60).**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ankit P. Gandhi whose telephone number is 571-270-3009. The examiner can normally be reached on Monday-Friday - 9:00 to 5:00 (Altern: Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

APG

CHIRAG G. SHAH
PRIMARY PATENT EXAMINER